



October 31, 2006

Mr. Earl Hayden
Shell Chemical LP
One Shell Plaza
910 Louisiana Street
Houston, TX 77002-4916

RE: Ready for Reuse Determination
Shell Chemical LP – Taft Facility; **AI # 583**
Hahnville, St. Charles Parish

Dear Mr. Hayden:

The Louisiana Department of Environmental Quality (LDEQ) and the United States Environmental Protection Agency (EPA) Region 6 together have determined that the Shell Chemical LP – Taft Facility (the “Property”), is Ready for Reuse. A Ready for Reuse Determination is an acknowledgement that environmental conditions on the property are protective of human health and the environment based on its current and anticipated future use.

The sixteen (16) acre facility is located at Hahnville, St. Charles Parish, Louisiana, and was developed in 1972 as a polybutylene bulk pellet manufacturing plant. The facility was operated by Shell from 1977 until its closure in 2002. A Louisiana Risk Evaluation/Corrective Action Program (RECAP) assessment of releases of Dowtherm GTM (a heat transfer fluid) at the property was conducted, and corrective action for the constituents of this product was implemented to meet industrial use RECAP standards. The Remediation Services Division of the LDEQ granted the facility a determination of No Further Action At This Time (NFA-ATT) on August 31, 2006.

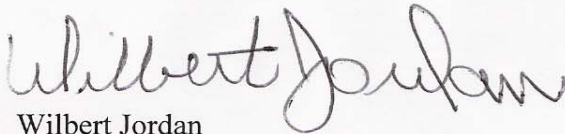
With this Ready for Reuse Determination, LDEQ and EPA Region 6 agree that Shell Chemical LP – Taft Facility has successfully conducted investigation and risk

management activities and the environmental conditions at the Property are protective of human health and the environment based on its current and anticipated future use as a commercial and industrial operation. The Ready for Reuse Basis of Decision is provided as Enclosure 1 to this letter, and a copy of the NFA-ATT is provided as Enclosure 2. Copies of relevant documents may be obtained from LDEQ or the facility at the addresses in Enclosure 3 to this letter.

If conditions at the facility change, including environmental conditions, land use, site receptors, and remedy performance, the current owner/operator will notify LDEQ and it may become necessary to perform additional remediation to ensure continuing protectiveness. The undersigned expressly reserve all rights and authorities to require future action by owners or operators if new or additional information comes to light that impacts this Ready for Reuse Determination, whether such information is known as of this date, or is discovered in the future.

Congratulations on this most noteworthy achievement!

Sincerely yours,



Wilbert Jordan
Assistant Secretary,
Office of Environmental Assessment
Louisiana Department of
Environmental Quality



Carl E. Edlund, P.E.
Director, RCRA
Multimedia Planning and
Permitting Division
EPA Region 6

Enclosure 1: Ready for Reuse Basis of Decision

Enclosure 2: NFA-ATT

Enclosure 3: Agency and Industry Contacts

c: Imaging Operations - SW

ENCLOSURE 1

READY FOR REUSE BASIS OF DECISION SHELL CHEMICAL LP, TAFT, LOUISIANA

1.0 INTRODUCTION

The Louisiana Department of Environmental Quality – Environmental Technology Division (LDEQ – ETD) has determined that Shell Chemical L P – Taft Facility, (Shell Chemical) is Ready for Reuse. The Taft facility meets the criteria for a Ready for Reuse determination because the property has been remediated to the extent that the environmental conditions are protective based on its current or planned land use. A description of the current site conditions, background information, and the results of remedial activities at the site are summarized in the following sections.

2.0 SITE DESCRIPTION AND SITE HISTORY

The former Shell Chemical Taft plant is located approximately 1 mile south of the Mississippi River in St. Charles Parish near Taft, Louisiana. The Site Location Map is provided as Figure 1. The Taft plant produced polybutylene in bulk pellet form from 1972 through 2002, and was operated by Shell from 1977 until its closure. Surface releases of Dowtherm GTM (a heat transfer fluid) were reported and site investigations and remediation focused on constituents of this product. A RECAP assessment of the property was conducted and corrective action was implemented to meet industrial use RECAP standards. The Site Plot Plan with Soil Borings, Well Locations, and Excavation Areas is provided as Figure2. The Remediation Services Division of the LDEQ granted the facility a determination of No Further Action At This Time (NFA-ATT) on August 31, 2006. A copy of the NFA-ATT is provided as Enclosure 2.

Although structures from historical industrial use are present at the site, the site is currently idle. In the future, the site will continue to be designated for industrial use. A conveyance notice was filed on August 14, 2006 in the St. Charles Parish Clerk of Court's Office following completion of remediation activities that identifies the future site land use as industrial. Additionally, the notice was filed in the St. Charles Parish mortgage records on August 22, 2006, as the site was closed under the solid waste

regulations of Title 33 of the Louisiana Administrative Code. Conveyance information is provided with the NFA-ATT in Enclosure 2.

3.0 ASSESSMENT, RISK CHARACTERIZATION, AND REMEDIAL ACTIONS

Soil and groundwater assessments at the former Taft Plant were conducted to address potential groundwater impacts of Dowtherm GTM. A chronological list of corrective action activities including site assessment, risk characterization, and remedial actions is summarized as follows:

- In the mid-1980's, Shell installed 20 shallow groundwater assessment wells to determine if the component constituents of Dowtherm GTM had impacted groundwater underlying the site. Groundwater samples from these wells have been collected and analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), and semi-volatile organic compounds (SVOC) since 1988.
- In 1990, Shell conducted a Phase I assessment to assess further the distribution of Dowtherm GTM, SVOCs, and TPH in soils. Soil borings were drilled to a depth of 50 feet below ground surface and the previously installed monitoring wells were gauged and sampled.
- In 1992, Shell conducted a Phase II assessment to delineate the extent of site constituents in shallow and deep groundwater. This included an evaluation of the hydrogeologic conditions influencing the occurrence and migration of constituents in groundwater and soil. As a result of this investigation, an Interim Measures Plan was submitted to the LDEQ that described the assessment results to date and provided a plan to address the presence of residual DNAPL observed in site monitoring wells (Woodward-Clyde, 1994).

The plan called for the thickness of DNAPL to be gauged on a semiannual basis. If DNAPL were encountered, the DNAPL was removed with a bailer and disposed of in accordance with regulatory requirements. DNAPL gauging and recovery was performed on a quarterly basis until 2003.

- A risk assessment report was prepared in 1993 to evaluate the potential risks due to industrial exposure to chemicals detected on site. The calculated risks were below the USEPA target risk range of 10^{-4} to 10^{-6} for incremental cancer risk and less than 1 for non-carcinogenic risks.
- In January 1998, Shell submitted a Risk-Based Corrective Action (RBCA) Plan for the site. The submittal was consistent with the LDEQ Draft RBCA program. The RBCA Plan concluded that groundwater impacts did not require further corrective action.
- In September 2003 and April 2004, Shell provided an updated RECAP assessment and addendum, respectively, to LDEQ in response to LDEQ comments on previous submittals (URS, 2003; GeoSyntec 2004). The RECAP Addendum included a DNAPL Source Characterization and Recovery Plan to improve the characterization and delineation of the soil residual DNAPL source. LDEQ provided a conditional approval of the RECAP addendum requesting that additional soil and groundwater sampling be included in the DNAPL Source Characterization and Recovery Plan.
- In 2005, a soil investigation in the vicinity of wells with measurable DNAPL (MW-5, MW-11, and MW-19) was conducted to refine the delineation of residual DNAPL in soil. In addition, all monitoring wells were gauged for the presence of DNAPL and a subset of existing wells and a temporary well located between MW-11 and MW-19 were sampled for VOCs and SVOCs.

A DNAPL gauging and recovery program was also conducted during 2005. On a quarterly basis, DNAPL was routinely recovered from only three shallow monitoring wells: MW-5, MW-11, and MW-19. The recovery amounts were documented and reported to LDEQ.

The results from these sampling programs indicated that DNAPL in groundwater and saturating the soil in the area of the three wells with DNAPL (MW-5, MW-11, and MW-19) was the sole medium at the site that exceeded site RECAP standards.

- In 2006, an investigation was conducted in the immediate vicinity of the above mentioned wells to refine the residual DNAPL delineation in the shallow-zone groundwater. The results of this investigation were used to identify the soils to be excavated for site remediation. The excavation was conducted in July 2006 and documented in the DNAPL Remediation Report (GeoSyntec, 2006c).

In August of 2006, Shell submitted conveyance notification documentation to the St. Charles Clerk of Court's office to maintain the designation of industrial/commercial use at the property and to indicate that closure was completed under the solid waste regulations. The Remediation Services Division of the LDEQ granted the facility a determination of No Further Action At This Time (NFA-ATT) on August 31, 2006.

4.0 CHEMICALS OF CONCERN AND SUMMARY OF SITE CONDITONS

Previous investigations and assessment reports (RECAP September 18, 2003 Addendum [GeoSyntec, 2004], and DNAPL and Residual COC Characterization Report [GeoSyntec, 2005]) demonstrated that residual concentrations of COCs in soil and groundwater in areas that do not contain residual DNAPL are below Management Option 1 (MO-1) RECAP standards and do not present an unacceptable risk to human health or the environment. The LDEQ-approved MO-1 RECAP standards presented in the RECAP reports assume commercial/industrial use at the site. The July 2006 remediation activities, which consisted of excavation in the areas of monitoring wells MW-5, MW-11, and MW-19, resulted in the removal of all media exceeding the MO-1 standards. Residual concentrations of site COCs that exceed residential standards, along with the sampling location and the maximum reported concentration remaining on-site, are summarized in Table 1.

5.0 SUPPORTING DOCUMENTATION

A summary of relevant documents related to site investigation, risk assessment, and remediation activities at the Shell Taft Facility is provided in Table 2. Directly relevant documents are identified in the References section below.

6.0 REFERENCES

- GeoSyntec. 2006a. Groundwater DNAPL Delineation Work Plan. Submitted on behalf of Shell Chemical LP, March 2006.
- GeoSyntec. 2006b. Groundwater DNAPL Delineation Report. Submitted on behalf of Shell Chemical LP, May 2006.
- GeoSyntec. 2006c. DNAPL Remediation Report. Submitted on behalf of Shell Chemical LP, August 2006.
- GeoSyntec. 2005. DNAPL and Residual COC Characterization Report. Submitted on behalf of Shell Chemical LP, May 2005.
- GeoSyntec. 2004. RECAP September 18, 2003 Report Addendum. Submitted on behalf of Shell Chemical LP, July 2004.

LIST OF TABLES

Table 1: Summary of Constituents Remaining at Site

Table 2: Document Summary - Shell Taft

Table 1
Summary of Constituents Remaining at Site

Compound	Units	Maximum Concentration Remaining On-Site	Location	RECAP MO-1 Standard
¹SOIL				
Diesel range organics	mg/kg	3200	MW5-CS2	10000
[#] Biphenyl phenyl ether	mg/kg	160	MW19-CS4	1100
[#] Diphenyl ether	mg/kg	580	MW5-CS4	1100
²GROUNDWATER				
Diesel range organics	mg/L	4.62	SW-5	5280
Gasoline range organics	mg/L	0.555	MW-15	6820
Biphenyl phenyl ether	mg/L	0.61	MW-10	21
Diphenyl ether	mg/L	0.0737	MW-13	21
Di-isopropyl ether	mg/L	0.345	MW-15	2420
Bis(2-ethyl-hexyl)phthalate	mg/L	0.018	DW-01	0.07

Notes:

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

¹ Maximum detected concentration of soil is based on analytical results for site borings that were not excavated as part of remedial activities.

^{*} Maximum concentration allowable under RECAP

[#] MO-1 standard based on soil saturation value.

² Maximum detected concentration reported in most recent sampling of site monitoring wells in which DNAPL was not observed. MO-1 standards based on GW-3 non-drinking water groundwater classification.

Table includes constituents with concentrations that exceeded published RECAP non-industrial screening standards.

Table 2
Document Summary - Shell Taft

Date	Classification	Author	Document Title/Description	Media/CD#	EDMS Doc#
1989	Report	Law	<i>Preliminary Site Assessment - Shell Chemical Company Taft, Louisiana</i>	Unavailable	Unknown
1993	Report	Woodward-Clyde	<i>Human Health Risk Assessment - Shell Chemical Company Taft, Louisiana</i>	Unavailable	Unknown
3/22/1990	Notes	LDEQ	Notes by Steve Hanson of LDEQ re: telephone conversation w/ Shell notifying LDEQ of Dowtherm release at Taft plant	2	1649056
4/4/1990	Letter	Shell	Confirmation of verbal notification of Dowtherm release at Taft plant	2	1649050
May-90	Report	Ecotech	<i>Subsurface Soil Investigation of the Polybutylene Plant Taft, Louisiana</i> (only report cover page included in NDMS files)	2	1649047
May-90	Report	Ecotech	<i>Subsurface Soil Investigation of the Polybutylene Plant Taft, Louisiana</i>	Hard copy	1654697
5/3/1990	Letter	Shell	Review of 3/23/90 telephone conversation w/ LDEQ	2	1649043
7/2/1990	Letter	Shell	Summary of 6/27/90 meeting with LDEQ	2	1649031
8/13/1990	Letter	LDEQ	Phase II assessment requested for additional horizontal and vertical delineation	2	8295134
9/21/1990	Report	Shell	Report in letter form re: Soil & groundwater contamination delineation, saturated zone characterization, and risk/exposure assessment. Contains recommendations for further delineation activities.	2	1649023
1/8/1991	Letter	LDEQ	Conditional approval of Phase II Subsurface Assessment Plan granted	2	1649020
4/22/1991	Letter	Shell	Proposal to revise sampling requirements dictated by LDEQ in letter dated 1/8/91	2	1649018
2/21/1992	Letter	LDEQ	Outline of previous conditional approval stipulations for Phase II Subsurface Site Assessment	2	1649014
2/21/1992	Letter	Shell	Request for written confirmation of Phase II Site Assessment proposal	2	1649016
2/10/1993	Report	Woodward-Clyde	<i>Final Report: Phase II Groundwater and Soil Assessment</i>	2	1654023
6/17/1993	Letter	Shell	Summary of 1990 Phase II assessment	2	1648973
6/19/1993	Letter	Woodward-Clyde	Notification of commencement of well installation activities	2	1648992
10/26/1993	Letter	LDEQ	Additional plume delineation of DNAPL required before corrective action can be considered	2	1648972
1/19/1994	Letter	Shell	Clarification of Phase II Groundwater and Soil Assessment of June 1993	2	1657170
4/28/1994	Letter	Shell	Groundwater monitoring summary 1986-1990	2	1657142
5/24/1994	Inspection report form	LDEQ	GWPD NAPL monitoring inspection	2	1657133
Jun-94	Report	Woodward-Clyde	<i>Final Report: Risk/Exposure Site Management Plan.</i> Describes the groundwater monitoring program for the Shell - Taft facility.	2	1654797
6/1/1994	Letter	Shell	Description of monitoring well construction	2	1657127
Jun-94	Report	Woodward-Clyde	<i>Interim Measures Plan - Shell Chemical Company Taft, Louisiana</i>	Hard copy	1654787

Table 2
Document Summary - Shell Taft

Date	Classification	Author	Document Title/Description	Media/CD#	EDMS Doc#
4/24/1995	Letter	LDEQ	Approval for installation of 2 perimeter monitoring wells	2	1657110
5/11/1995	Letter	Woodward-Clyde	Notification of field work dates	2	1657109
5/24/1995	Inspection report form	LDEQ	Summarizes GWPD NAPL monitoring meeting with Shell and consultants	2	1657107
Nov-95	Report	Woodward-Clyde	Final Report: <i>Risk/Exposure Site Management Program Semiannual Groundwater Monitoring Report, June 1995 Monitoring Event</i>	2	1646820
5/29/1996	Inspection report form	LDEQ	GWPD NAPL monitoring inspection	2	1657102
6/3/1996	Report	Woodward-Clyde	Final Report: <i>Risk/Exposure Site Management Program Semiannual Groundwater Monitoring Report, November-December 1995 Event</i>	2	1654298
6/16/1997	Inspection report form	LDEQ	GWPD NAPL monitoring inspection	2	1657075
8/6/1997	Inspection report form	LDEQ	GWPD NAPL monitoring inspection	2	1657094
6/25/1998	Inspection report form	LDEQ	GWPD NAPL monitoring inspection	2	1657080
6/12/2000	Inspection report form	LDEQ	Groundwater inspection report	2	9890786
11/9/2000	Letter	Shell	90-day extension requested for response to 9/1/00 NOD for Risk Based Corrective Action Plan dated 1/21/98	2	13970796
11/30/2000	Letter	LDEQ	90-day extension requested 11/9/00 granted	2	14779469
6/28/2001	Letter	Shell	Additional 30 day requested extension for response to 9/1/00 NODs for RCBA Plan dated 1/21/98	2	19258776
7/12/2001	Letter	LDEQ	30 day extension requested 6/29/01 granted	2	19444822
8/14/2001	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana; Vol II</i>	2	20070283
8/14/2001	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana; Vol I part 1</i>	2	20071508
8/14/2001	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana; Vol I part 2</i>	2	20071614
8/14/2001	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana; Vol unknown</i>	2	20072131
1/8/2003	Letter	Shell	Response to LDEQ notice of deficiency for the RECAP Risk Based Corrective Action Plan dated 1/21/98; Risk Exposure Site Management Plan.	1	24874644
5/27/2003	Letter	Shell	Request for 30 day extension to address deficiencies in NOD received 9/1/00 for Risk Based Corrective Action Plan dated 1/21/98	1	26992328
8/21/2003	Letter	LDEQ	Additional 30 day extension for NOD response requested by Shell of 5/27/03 granted	1	29063958
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. II of III; Section 1</i>	1	28593747
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. II of III; Section 2</i>	1	28596596
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. II of III; Section 3</i>	1	28599241

Table 2
Document Summary - Shell Taft

Date	Classification	Author	Document Title/Description	Media/CD#	EDMS Doc#
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. II of III; Section 4</i>	1	28601885
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. III of III; Section 1</i>	1	28934327
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. III of III; Section 2</i>	1	28934673
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. III of III; Section 3</i>	1	28935023
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. III of III; Section 4</i>	1	28935466
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. I of III; Section 1</i>	1	29127246
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. RECAP report vol. I of III; Section 2</i>	1	29127624
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. I of III; Section 3</i>	1	29128249
9/18/2003	Report	URS	<i>Risk Evaluation/Corrective Action Program (RECAP), Shell Taft Plant, St. Charles Parish Louisiana. vol. I of III; Section 4</i>	1	29128535
7/9/2004	Report	GeoSyntec	<i>RECAP September 18, 2003 Report Addendum Shell Taft Plant St. Charles Parish, Louisiana</i>	1	31948656
11/10/2004	Letter	LDEQ	7/9/04 responses to NODs for 9/18/03 RECAP Addendum report approved	2	32499775
2/23/2005	Letter	Shell	Notice to LDEQ of commencement of field work for DNAPL Source Characterization and Recovery Plan Addendum	1	32685029
3/8/2005	Letter	LDEQ	Conditional approval of DNAPL Source Characterization and Recovery Plan Addendum	1	32725545
5/27/2005	Report	GeoSyntec	<i>DNAPL & Residual COC Characterization Report, Shell Chemical LP - Taft, Louisiana</i>	1	32889775
8/11/2005	Report	Shell	<i>DNAPL Gauging and Recovery Report - 2nd Quarter 2005, Shell Chemical LP - Taft, Louisiana</i>	1	33253007
1/23/2006	Report	Shell	<i>DNAPL Gauging and Recovery Report - 4th Quarter 2005, Shell Chemical LP - Taft, Louisiana</i>	1	33849849
3/17/2006	Letter	LDEQ	Summary of ready-for-reuse meeting	2	34082500
3/30/2006	Letter	LDEQ	Groundwater DNAPL Delineation Workplan dated 3/30/06 approved	2	34100734
5/10/2006	Report	GeoSyntec	<i>Groundwater DNAPL Delineation Report</i>	3	--
5/17/2006	Letter	LDEQ	<i>Conditional Approval of Groundwater DNAPL Delineation Report and Corrective Action Work Plan</i>	3	--
5/22/2006	Letter	GeoSyntec	Plug and Abandonment - Supporting Information	3	--
6/2/2006	Meeting Attendance Record	LDEQ	Meeting to discuss DNAPL Corrective Action, Conveyance Notification/NFA, Water Permit, and Potential VRP	3	--
6/6/2006	Letter	LDEQ	Conveyance Notice Requirements for No Further Action	3	--
8/3/2006	Report	GeoSyntec	Plug and Abandonment Report	3	

Table 2
Document Summary - Shell Taft

Date	Classification	Author	Document Title/Description	Media/CD#	EDMS Doc#
8/14/2006	Report	GeoSyntec	DNAPL Remediation Report	3	
	Figure	Woodward-Clyde	Monitoring well locations	2	18194265
	Figure	Woodward-Clyde	Site location	2	18194389
	Figure	Woodward-Clyde	Soil sampling locations	2	18194391
	Figure	Woodward-Clyde	Potentiometric surface map	2	18194388
	Figure	Woodward-Clyde	Potentiometric surface map	2	18194399
	Figure	Woodward-Clyde	Shallow zone ether isopac	2	18194400

LIST OF FIGURES

- Figure 1: Site Location Map, Shell Chemical LP – Taft Plant
- Figure 2: Site Plot Plan with Soil Borings, Well Locations, and Excavation Areas

